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(21) International Application Number: PCT/EP98/05718 (22) International Filing Date: 2 September 1998 (02.09.98) (30) Priority Data: PCT/EP97/05045 15 September 1997 (15.09.97) EP (71) Applicant (for all designated States except CA FR US): SOF-ITECH N.V. [BE/BE]; 140, rue de Stalle, B-1180 Uccle-Bruxelles (BE). (71) Applicant (for CA only): SCHLUMBERGER CANADA LIMITED [CA/CA]; 24th floor, Monenco Place, 801 6th Avenue S.W., Calgary, Alberta T2P 3W2 (CA). (71) Applicant (for FR only): COMPAGNIE DES SERVICES DOWELL SCHLUMBERGER [FR/FR]; 50, avenue Jean-Jaurès, F-92541 Montrouge (FR). (72) Inventors; and (75) Inventors/Applicants (for US only): MAITLAND, Geoffrey [GB/GB]; Schlumberger Cambridge Research Limited, High Cross, Madingley Road, Cambridge CB3 0EL (GB). SAWDON, Christopher [GB/GB]; 6 Southview Road Biscovey, Par, Cornwall PL24 2HJ (GB). TEHRANI, Mostafa		(74) Agent: MENES, Catherine; Etudes & Productions Schlumberger, Division Dowell, 26, rue de la Cavée, Boîte postale 202, F-92142 Clamart Cedex (FR). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: ELECTRICALLY CONDUCTIVE NON-AQUEOUS WELLBORE FLUIDS (57) Abstract <p>A wellbore fluid having a non-aqueous continuous liquid phase that exhibits an electrical conductivity of not less than $10 \mu\text{S m}^{-1}$ at 1 kHz comprises a polar organic liquid (POL) which exhibits a dielectric constant of at least about 5.0 and a Hildebrand Solubility Parameter of at least about $17 (\text{J cm}^{-3})^{1/2}$. Oils or other organic liquids (OL) known to be suitable as the continuous liquid phase of wellbore fluids, may be used in admixture with POL component. Certain inorganic salts, organic bases, quaternary ammonium salts or hydroxides (the dissolved component, DC), display sufficient solubility (and current carrying abilities) in POL, OL or in mixtures of liquid (POL) and liquid (OL) to further improve the electrical conductivity of the mixture. The wellbore fluid can be used for providing enhanced information from electrical logging tools, measurement while drilling, logging while drilling, geosteering and the like.</p>		